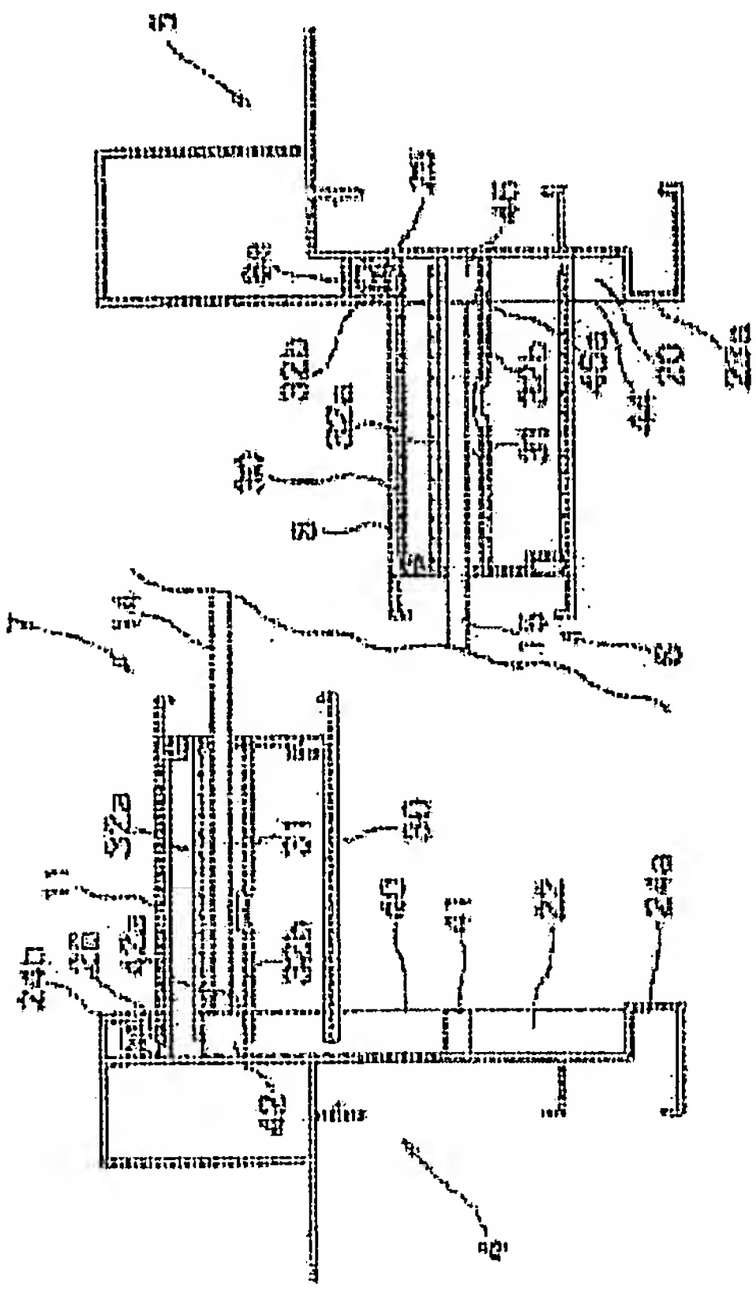
English abstract of JP 03-056254

PROBLEM TO BE SOLVED: To provide an opening section device capable of positioning the ends of a sliding door on proper positions to air-tight members when the sliding door is fully shut.

SOLUTION: Rebates 20 and 22 consisting of recess sections for accepting the ends of sliding door are formed in both right and left stiles 4 and 5, at the same time, the air-tight members 25 and 26 are provided to stage sections 23b and 24b of the rebates near to the ends of the sliding door in the case it is fully shut, spacer members 40 and 44 for filling in an unnecessary space of the rebate 22 formed in a joint part between the head 2 and the sill 3 are mounted on at least one end section of the stiles, at the same time, a taking in member 30 of a sliding door guide rail 13 is provided on the ends of the sliding door, rail extended members 42 and 46 extended from the sliding door guide rail 13 are integrally formed in the spacer member 40, and attractable faces 42a and 46a for positioning the ends of the sliding door on the proper positions to the air-tight members 25 and 26 are formed in the rail extended member 42 while coming into contact with the inside of the taking in member 30.



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Abstract:
PROBLEM TO BE SOLVED: To provide an opening section device capable of positioning the ends of a sliding door on proper positions to air-tight members when the sliding door is fully shut. SOLUTION: Rebates 20 and 22 consisting of recess sections for accepting the ends of sliding door are formed in both right and left stiles 4 and 5, at the same time, the air-tight members 25 and 26 are provided to stage sections 23b and 24b of the rebates near to the ends of the sliding door in the case it is fully shut, spacer members 40 and 44 for filling in an unnecessary space of the rebate 22 formed in a joint part between the head 2 and the sill 3 are mounted on at least one end section of the stiles, at the same time, a taking in member 30 of a sliding door guide rail 13 is provided on the ends of the sliding door, rail extended members 42 and 46 extended from the sliding door guide rail 13 are integrally formed in the spacer member 40, and attractable faces 42a and 46a for positioning the ends of the sliding door on the proper positions to the air-tight members 25 and 26 are formed in the rail extended member 42 while

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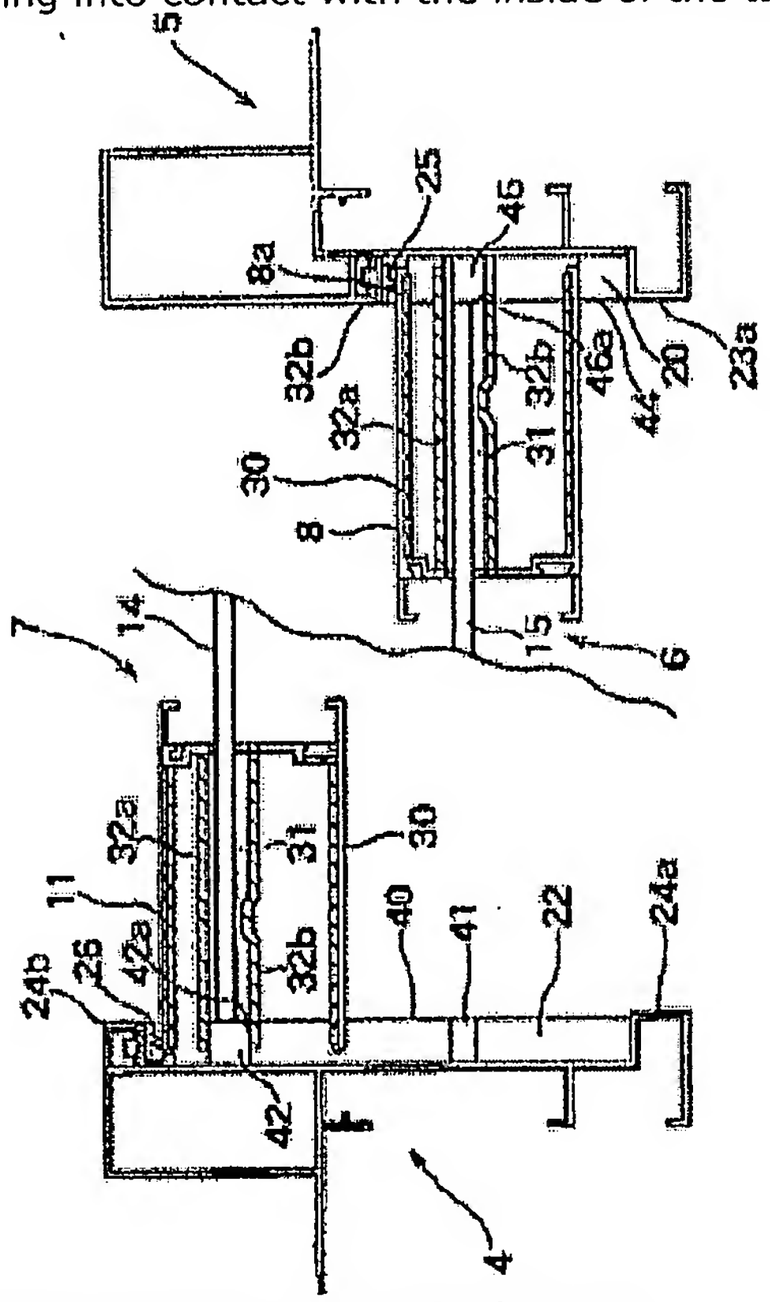

JPO Machine translation abstract:

(57) **Abstract**

SUBJECT When making a shoji into full close, the door end of a shoji is positioned in a suitable position to an airtight material.

Means for Solution While forming the rebates 20 and 22 which become the door posts 4 and 5 on either side from a crevice in which a door end of a shoji is accepted, respectively, The airtight materials 25 and 26 are formed in the steps 23b and 24b of a rebate close to a door end of a shoji at the time of full close, the spacing members 40 and 44 for filling an unnecessary space of the rebate 22 formed in a joining section with the vertical frames 2 and 3 are attached to at least one end of said door post -- both, The swallowing member 30 of the shoji guiding rail 13 is formed in the door-end side of said shoji, The rail extension members 42 and 46 extended from the shoji guiding rail 13 are formed in the spacing member 40 in one, a door end of a shoji is positioned in a proper position to the airtight members 25 and 26, understanding to this rail extension member 42, and touching an inner surface of the member 30 -- it draws near and the fields 42a and 46a are formed.

Claim(s)

Claim 1 While forming a rebate which consists of a crevice characterized by comprising the following which is an opening device and accepts a door end of a shoji in a door post of said right and left, respectively, An airtight material is formed in a door end of a shoji at the time of full close, a step of an approaching rebate, or said door end, a spacing member for filling an unnecessary space of a rebate formed in a joining section with said vertical frame is attached to at least one end of said door post -- both, Provide a swallowing part of a shoji guiding rail in the door-end side of said shoji, and to said spacing member. An opening device characterized by a thing which position a door end of a shoji in a proper position to said airtight member while forming in one a rail extension member extended from a shoji guiding rail of said cope box or a drag flask and touching said rail extension member with an inner surface of said swallowing part, and for which it drew near and a part was formed.

A frame formed with a four-directions frame.

A shoji of two right and left opened and closed by lengthen difference within said frame.

Detailed Description of the Invention

0001

Field of the Invention This invention relates to the opening device made as **position / the door end of a sliding door / by the proper position in a rebate** , when the opening device which has a sliding door attached to the opening of houses, such as the door, is started and a sliding door is shut especially.

0002

Description of the Prior Art Conventionally, this kind of opening device is widely used as an entrance sliding door in a common house. A sliding door consists of a shoji (door object) of two sheets opened and closed by lengthen difference, and a window screen is attached further in many cases.

0003 In such a sliding door, the guide rail which shows a cope box or a drag flask to the opening and closing movement of a shoji can be provided, and can be, and it can open now to a shoji and close smoothly by making it fixed backlash and deflection arise.

0004 The crevice called the rebate which accepts the door end of a shoji is formed in the door post.

If a shoji is shut, the door end will go into a rebate, it will hit with an airtight material, and a crevice will arise.

0005

Problem(s) to be Solved by the Invention However, if it was in the drag flask, since it did not show around with a guide rail, when the door end of a shoji had shut the shoji thoroughly, the door end swayed and it had the fault that did not enter into a rebate or a crevice was made without a door end and an airtight material hitting properly.

0006 Then, there is the purpose of this invention in providing the opening device which can position the door end of a shoji in a suitable position to an airtight material, when canceling the problem which said conventional technology has and making a shoji into full close.

0007

Means for Solving the ProblemA frame in which this invention was formed with a four-directions frame in order to attain the aforementioned purpose, While forming a rebate which consists of a crevice which is an opening device which has a shoji of two right and left opened and closed by lengthen difference within said frame, and accepts a door end of a shoji in a door post of said right and left, respectively, An airtight material is formed in a door end of a shoji at the time of full close, a step of an approaching rebate, or said door end, a spacing member for filling an unnecessary space of a rebate formed in a joining section with said vertical frame is attached to at least one end of said door post -- both, Provide a swallowing part of a shoji guiding rail in the door-end side of said shoji, and to said spacing member. It is characterized by a thing which position a door end of a shoji in a proper position to said airtight member and for which it drew near and a part was formed, forming in one a rail extension member extended from a shoji guiding rail of said cope box or a drag flask, and touching said rail extension member with an inner surface of said swallowing part.

0008

Embodiment of the Invention Hereafter, one embodiment of the opening device by this invention is described, referring to attached Drawings. Drawing 1 is a front view showing the embodiment which applied this invention to the entrance sliding door of the house. Kamoi 2 which is a cope box, the threshold 3 which is drag flasks, and the frame which carried out the four-quarters group of the door posts 4 and 5 on either side are attached to the opening of the door, and it is built so that the shojis 6 and 7 of two sheets may be opened and closed by this frame at a lengthen difference. Although a window screen is attached to this entrance sliding door, the window screen is having the graphic display omitted in drawing 1.

0009 Drawing 2 is a figure showing the cross section of the whole entrance sliding door, and drawing 3 is a figure showing the section of Kamoi 2 and the threshold 3. The reference marks 8 and 9 are the stiles which constitute the shoji 6, and the reference marks 10 and 11 are stiles which constitute the shoji 7. It is formed so that the guide rails 12 and 13 may project vertically, respectively as a member to which it shows opening and closing of the shoji 6 and the shoji 7, and the shojis 6 and 7 move to the upper surface of the threshold 3, sliding along

with the guide rails 12 and 13. In the guide rails 12 and 13, the extension rails 12a and 13a are prolonged in parallel, respectively. On the other hand, in Kamoi 2, as shown in drawing 3, the guide rails 18 and 19 have hung vertically. The window screen 12 is arranged most in parallel with the shojis 6 and 7 at the outdoor side, can be slid along with the rail 17, and can be opened and closed.

0010 Next, drawing 4 shows the A-A section of drawing 3, and shows the rebate 20 currently formed in the right longitudinal frame 5, and the rebate 22 of the left-vertical frame 4. First, the outer edge section of the stile 8 is the door end 8a, and the rebate 20 constitutes the crevice in which the door end 8a is accepted from the shoji 6, when the shoji 6 is shut. In this case, the width of the rebate 22 is set as the width dimension equivalent to one sheet of the shoji 6. As a result of forming a crevice like the rebate 20 in the right longitudinal frame 5, the step 23a is formed in the outdoor side in the right longitudinal frame 5. The airtight material 25 which the door end 8a of the shoji 6 at the time of full close approaches, and carries out the seal of the crevice between the door ends 8a to this step 23b is attached to the step 23b of another side by the side of the interior of a room which confronts this step 23a and rebate 20 each other in between.

0011 On the other hand, in drawing 4, the rebate 22 is similarly formed in the left-vertical frame 4. The rebate 22 provided in this left-vertical frame 4 differs in width in the rebate 20 of the right longitudinal frame 5, It is constituted as a crevice which has the width for two sheets of the shojis 6 and 7, and the door end 11a which is an outer edge section of the stile 11 of the shoji 7 enters into the position which approached the interior-of-a-room side in the rebate 22. Thus, the step 23a of said right longitudinal frame 5 and the step 24a which counters are formed in the direction of an outdoor side by establishing the crevice which has the width for two sheets of the shojis 6 and 7 as the rebate 22 in the direction of the left-vertical frame 4. The airtight material 26 which the door end 11a of the shoji 7 at the time of full close approaches, and carries out the seal of the crevice between the door ends 11a of the shoji 7 to this step 24b is attached to the step 24b of another side by the side of the interior of a room which confronts this step 24a and rebate 22 each other in between.

0012 As shown in drawing 2, the shielding member 30 which consists of a flexible material of rubber etc. is attached to the door ends 15a and 16a of the right and left of the window screen 14. This shielding member 30 is continued and prolonged for the overall length of the corner edge by the side of the interior of a room of 15a and 16a of a door end, and the fillet part 31 projects it toward the rebates 20 and 22.

0013 In drawing 3 and drawing 4, the upper bed part of the stile 8 of the shoji 6 and the stile 11 of the shoji 7 is equipped with the rail swallowing member 30 which swallows the guide rails 18 and 19, respectively. This rail swallowing member 30 is a member of the cap form fitted in and attached to the upper bed part of the stiles 7 and 8 by the member made of long direction bodily-shape-like resin. As shown in drawing 4, the rail groove 31 which swallows the guide rails 18 and 19 is formed of the walls 32a and 32b, and the interval of the walls 32a and 32b has a size which took predetermined play in addition to the width of the guide rails 18 and 19 in this case.

0014 Next, drawing 5 shows the spacing member 40 attached to the upper bed part of the left-vertical frame 4. As shown in drawing 5, when Kamoi 2 is joined to the left-vertical frame 4, in the upper bed part of the left-vertical frame 4, between Kamoi 2, a part of rebate 22 serves as an unnecessary space, and it will be left behind. the spacing member 40 is a member attached in order to fill this unnecessary space -- the width of the rebate 22, and abbreviation -- it has equal width and the height for an unnecessary space.

0015 In drawing 4 and drawing 5, the rail extension members 41 and 42 which follow the guide rails 18 and 19 of Kamoi 2 are formed in such a spacing member 40, and integral moulding is carried out to it so that it may hang from the body part of the spacing member 40.

0016 As shown in drawing 4, if the rail extension member 42 makes the shoji 7 full close and it is put into the rebate 22, it will be inserted in the rail groove 31 by a relation with the rail swallowing member 30 with which the stile 11 of the shoji 7 was equipped. and while the taper surface 42a is formed in this rail extension member 42 and this tapered surface 42a touches the inner surface of the wall 32b, the door end 11a of the shoji 7 is positioned in a proper position to the airtight member 26 -- it draws near and functions as a field.

0017 The same spacing member 44 is attached also to the upper bed part of the right longitudinal frame 5. Since the width of the rebate 20 is one sheet of the shoji 6 in the case of the right longitudinal frame 5, the width of the spacing member 44 is equivalent to the width of the narrow rebate 20, and the rail extension member 46 which follows the guide rail 15 is

formed in one one. This rail extension member 46 is formed by the taper surface 46a by **who mentioned above / the rail extension member 42 and Hitoshi** , and this taper surface 46a, The point of positioning the door end 8a of the shoji 6 in a proper position to the airtight member 25 and of drawing near and functioning as a field is the same, touching the inner surface of the wall 32b of the rail swallowing member 30.

0018 Next, drawing 6 is a figure showing the door end 11a just before making the shoji 7 into full close, and the physical relationship of the rail extension member 42. When moving in order to shut the shoji 7 since the floor roller which has been attached to the shoji 7 and which is not illustrated rolls in the case of the guide rail 18 of Kamoi 2, shakiness and blur of some arise. For this reason, a position just before the door end 11a of the shoji 7 enters into the rebate 22 assumes that the interior-of-a-room side was approached like drawing 6. If the shoji 7 is shut further and it puts into the rebate 22, the tapered surface 42a of the rail extension member 42 hits inside the wall 32b of the rail swallowing member 30, and the door end 11a can be drawn little by little near to the outdoor side according to the tapered surface 42a in the process in which the shoji 7 is shut thoroughly. Eventually, the door end 11a and the airtight member 26 are positioned by the position which touches properly.

0019 Thus, by forming the rail extension member 42 in the spacer 40 at one, and establishing the tapered surface 42a in the rail extension member 42 further, even if blur arises in the shoji 7, it can draw near to the proper position in the rebate 22, and can position. Like this embodiment, since the rail extension member 42 can be hidden so that it may insert in a door end and may not be visible from outside if the shoji 7 is shut when the rebate 22 is broad with two shojis, the fine sight on a design especially improves. In order to hit the outside of the door end 11a of the shoji 7 at the broad rebate 22, not to provide the member which draws near and carries out the door end 11a, to reduce part mark and to fill the space which does not need a joining section with Kamoi 2, it can draw near to a certain spacer 40 from the former, and structure can be made to make it serve a double purpose.

0020 Also when putting the door end 8a of the shoji 6 into the rebate 20 of the right longitudinal frame 5 in drawing 4, Similarly the wall 32b of the rail swallowing member 30 hits the spacer 44 in the tapered surface 46a of the really formed rail extension member 46, and the door end 8a of the shoji 6 can be drawn near to a proper position to the airtight material 25.

0021 Drawing 7 shows the B-B section of drawing 3, and shows the spacing member 50 attached to the lower end part of the left-vertical frame 4. The positioning part 52 is formed in the spacing member 50 which fills the unnecessary space of the rebate 22 made at a left-vertical frame and the joining section of Kamoi 2 in one.

0022 As shown in drawing 3 and drawing 7, the lower end part of the stile of the shoji 7 is also equipped with the same rail swallowing member 54. In this rail swallowing member 54, the crevice 55 of the section U type which ****s to the guide rail 12 is formed. The extension rail 12a hits the wall 56 formed in the rail swallowing member 54. Although the lower end part of the stile 8 of the shoji 6 of another side is also equipped with the rail swallowing member 34, a graphic display omits it.

0023 In the case of the guide rail 12 of the threshold 3, the shoji 7 moves sliding and there are little shakiness and blur compared with the Kamoi 2 side. For this reason, since the wall 56 hits the side of the positioning member 52 just before being able to shut the shoji 7 and carrying out full close, applying the extension rail 12a to the wall 56 of the rail swallowing member 54, the door end 11a can be positioned in a proper position.

0024

Effect of the Invention According to this invention, the swallowing member of a shoji guiding rail is provided in the door-end side of a shoji so that clearly from the above explanation, The rail extension member which follows the shoji guiding rail of said cope box or a drag flask is formed in said spacing member in one, the door end of a shoji is positioned in a proper position to said airtight member, touching said rail extension member with the inner surface of said swallowing part, since it drew near and the field was formed, Since it can hide so that it may become possible to position the door end of a shoji in a suitable position to an airtight material, and a rail extension member may be inserted in a door end and it may not be visible from outside when making a shoji into full close, the fine sight on a design can be raised.

Field of the Invention This invention relates to the opening device made as **position / the**

door end of a sliding door / by the proper position in a rebate , when the opening device which has a sliding door attached to the opening of houses, such as the door, is started and a sliding door is shut especially.

Description of the Prior Art Conventionally, this kind of opening device is widely used as an entrance sliding door in a common house. A sliding door consists of a shoji (door object) of two sheets opened and closed by lengthen difference, and a window screen is attached further in many cases.

0003 In such a sliding door, the guide rail which shows a cope box or a drag flask to the opening and closing movement of a shoji can be provided, and can be, and it can open now to a shoji and close smoothly by making it fixed backlash and deflection arise.

0004 The crevice called the rebate which accepts the door end of a shoji is formed in the door post, if a shoji is shut, the door end will go into a rebate, it will hit with an airtight material, and a crevice will arise.

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Problem(s) to be Solved by the Invention However, if it was in the drag flask, since it did not show around with a guide rail, when the door end of a shoji had shut the shoji thoroughly, the door end swayed and it had the fault that did not enter into a rebate or a crevice was made without a door end and an airtight material hitting properly.

0006 Then, there is the purpose of this invention in providing the opening device which can position the door end of a shoji in a suitable position to an airtight material, when canceling the problem which said conventional technology has and making a shoji into full close.

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Means for Solving the ProblemA frame in which this invention was formed with a four-directions frame in order to attain the aforementioned purpose, While forming a rebate which consists of a crevice which is an opening device which has a shoji of two right and left opened and closed by lengthen difference within said frame, and accepts a door end of a shoji in a door post of said right and left, respectively, An airtight material is formed in a door end of a shoji at the time of full close, a step of an approaching rebate, or said door end, a spacing member for filling an unnecessary space of a rebate formed in a joining section with said vertical frame is attached to at least one end of said door post -- both, Provide a swallowing part of a shoji guiding rail in the door-end side of said shoji, and to said spacing member. It is characterized by a thing which position a door end of a shoji in a proper position to said airtight member and for which it drew near and a part was formed, forming in one a rail extension member extended from a shoji guiding rail of said cope box or a drag flask, and touching said rail extension member with an inner surface of said swallowing part.

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four-quarters group of the door posts 4 and 5 on either side are attached to the opening of the door, and it is built so that the shojis 6 and 7 of two sheets may be opened and closed by this frame at a lengthen difference. Although a window screen is attached to this entrance sliding door, the window screen is having the graphic display omitted in drawing 1.

0009 Drawing 2 is a figure showing the cross section of the whole entrance sliding door, and drawing 3 is a figure showing the section of Kamoi 2 and the threshold 3. The reference marks 8 and 9 are the stiles which constitute the shoji 6, and the reference marks 10 and 11 are stiles which constitute the shoji 7. It is formed so that the guide rails 12 and 13 may project vertically, respectively as a member to which it shows opening and closing of the shoji 6 and the shoji 7, and the shojis 6 and 7 move to the upper surface of the threshold 3, sliding along with the guide rails 12 and 13. In the guide rails 12 and 13, the extension rails 12a and 13a are prolonged in parallel, respectively. On the other hand, in Kamoi 2, as shown in drawing 3, the guide rails 18 and 19 have hung vertically. The window screen 12 is arranged most in parallel with the shojis 6 and 7 at the outdoor side, can be slid along with the rail 17, and can be opened and closed.

0010 Next, drawing 4 shows the A-A section of drawing 3, and shows the rebate 20 currently formed in the right longitudinal frame 5, and the rebate 22 of the left-vertical frame 4. First, the outer edge section of the stile 8 is the door end 8a, and the rebate 20 constitutes the crevice in which the door end 8a is accepted from the shoji 6, when the shoji 6 is shut. In this case, the width of the rebate 22 is set as the width dimension equivalent to one sheet of the shoji 6. As a result of forming a crevice like the rebate 20 in the right longitudinal frame 5, the step 23a is formed in the outdoor side in the right longitudinal frame 5. The airtight material 25 which the door end 8a of the shoji 6 at the time of full close approaches, and carries out the seal of the crevice between the door ends 8a to this step 23b is attached to the step 23b of another side by the side of the interior of a room which confronts this step 23a and rebate 20 each other in between.

0011 On the other hand, in drawing 4, the rebate 22 is similarly formed in the left-vertical frame 4. The rebate 22 provided in this left-vertical frame 4 differs in width in the rebate 20 of the right longitudinal frame 5, It is constituted as a crevice which has the width for two sheets of the shojis 6 and 7, and the door end 11a which is an outer edge section of the stile 11 of the shoji 7 enters into the position which approached the interior-of-a-room side in the rebate 22. Thus, the step 23a of said right longitudinal frame 5 and the step 24a which counters are formed in the direction of an outdoor side by establishing the crevice which has the width for two sheets of the shojis 6 and 7 as the rebate 22 in the direction of the left-vertical frame 4. The airtight material 26 which the door end 11a of the shoji 7 at the time of full close approaches, and carries out the seal of the crevice between the door ends 11a of the shoji 7 to this step 24b is attached to the step 24b of another side by the side of the interior of a room which confronts this step 24a and rebate 22 each other in between.

0012 As shown in drawing 2, the shielding member 30 which consists of a flexible material of rubber etc. is attached to the door ends 15a and 16a of the right and left of the window screen 14. This shielding member 30 is continued and prolonged for the overall length of the corner edge by the side of the interior of a room of 15a and 16a of a door end, and the fillet part 31 projects it toward the rebates 20 and 22.

0013 In drawing 3 and drawing 4, the upper bed part of the stile 8 of the shoji 6 and the stile 11 of the shoji 7 is equipped with the rail swallowing member 30 which swallows the guide rails 18 and 19, respectively. This rail swallowing member 30 is a member of the cap form fitted in and attached to the upper bed part of the stiles 7 and 8 by the member made of long direction bodily-shape-like resin. As shown in drawing 4, the rail groove 31 which swallows the guide rails 18 and 19 is formed of the walls 32a and 32b, and the interval of the walls 32a and 32b has a size which took predetermined play in addition to the width of the guide rails 18 and 19 in this case.

0014 Next, drawing 5 shows the spacing member 40 attached to the upper bed part of the left-vertical frame 4. As shown in drawing 5, when Kamoi 2 is joined to the left-vertical frame 4, in the upper bed part of the left-vertical frame 4, between Kamoi 2, a part of rebate 22 serves as an unnecessary space, and it will be left behind. the spacing member 40 is a member attached in order to fill this unnecessary space -- the width of the rebate 22, and abbreviation -- it has equal width and the height for an unnecessary space.

0015 In drawing 4 and drawing 5, the rail extension members 41 and 42 which follow the guide rails 18 and 19 of Kamoi 2 are formed in such a spacing member 40, and integral moulding is carried out to it so that it may hang from the body part of the spacing member 40.

0016 As shown in drawing 4, if the rail extension member 42 makes the shoji 7 full close and it is put into the rebate 22, it will be inserted in the rail groove 31 by a relation with the rail swallowing member 30 with which the stile 11 of the shoji 7 was equipped. and while the taper surface 42a is formed in this rail extension member 42 and this tapered surface 42a touches the inner surface of the wall 32b, the door end 11a of the shoji 7 is positioned in a proper position to the airtight member 26 -- it draws near and functions as a field.
0017 The same spacing member 44 is attached also to the upper bed part of the right longitudinal frame 5. Since the width of the rebate 20 is one sheet of the shoji 6 in the case of the right longitudinal frame 5, the width of the spacing member 44 is equivalent to the width of the narrow rebate 20, and the rail extension member 46 which follows the guide rail 15 is formed in one one. This rail extension member 46 is formed by the taper surface 46a by **who mentioned above / the rail extension member 42 and Hitoshi** , and this taper surface 46a, The point of positioning the door end 8a of the shoji 6 in a proper position to the airtight member 25 and of drawing near and functioning as a field is the same, touching the inner surface of the wall 32b of the rail swallowing member 30.
0018 Next, drawing 6 is a figure showing the door end 11a just before making the shoji 7 into full close, and the physical relationship of the rail extension member 42. When moving in order to shut the shoji 7 since the floor roller which has been attached to the shoji 7 and which is not illustrated rolls in the case of the guide rail 18 of Kamoi 2, shakiness and blur of some arise. For this reason, a position just before the door end 11a of the shoji 7 enters into the rebate 22 assumes that the interior-of-a-room side was approached like drawing 6. If the shoji 7 is shut further and it puts into the rebate 22, the tapered surface 42a of the rail extension member 42 hits inside the wall 32b of the rail swallowing member 30, and the door end 11a can be drawn little by little near to the outdoor side according to the tapered surface 42a in the process in which the shoji 7 is shut thoroughly. Eventually, the door end 11a and the airtight member 26 are positioned by the position which touches properly.
0019 Thus, by forming the rail extension member 42 in the spacer 40 at one, and establishing the tapered surface 42a in the rail extension member 42 further, even if blur arises in the shoji 7, it can draw near to the proper position in the rebate 22, and can position. Like this embodiment, since the rail extension member 42 can be hidden so that it may insert in a door end and may not be visible from outside if the shoji 7 is shut when the rebate 22 is broad with two shojis, the fine sight on a design especially improves. In order to hit the outside of the door end 11a of the shoji 7 at the broad rebate 22, not to provide the member which draws near and carries out the door end 11a, to reduce part mark and to fill the space which does not need a joining section with Kamoi 2, it can draw near to a certain spacer 40 from the former, and structure can be made to make it serve a double purpose.
0020 Also when putting the door end 8a of the shoji 6 into the rebate 20 of the right longitudinal frame 5 in drawing 4, Similarly the wall 32b of the rail swallowing member 30 hits the spacer 44 in the tapered surface 46a of the really formed rail extension member 46, and the door end 8a of the shoji 6 can be drawn near to a proper position to the airtight material 25.
0021 Drawing 7 shows the B-B section of drawing 3, and shows the spacing member 50 attached to the lower end part of the left-vertical frame 4. The positioning part 52 is formed in the spacing member 50 which fills the unnecessary space of the rebate 22 made at a left-vertical frame and the joining section of Kamoi 2 in one.
0022 As shown in drawing 3 and drawing 7, the lower end part of the stile of the shoji 7 is also equipped with the same rail swallowing member 54. In this rail swallowing member 54, the crevice 55 of the section U type which ****s to the guide rail 12 is formed. The extension rail 12a hits the wall 56 formed in the rail swallowing member 54. Although the lower end part of the stile 8 of the shoji 6 of another side is also equipped with the rail swallowing member 34, a graphic display omits it.
0023 In the case of the guide rail 12 of the threshold 3, the shoji 7 moves sliding and there are little shakiness and blur compared with the Kamoi 2 side. For this reason, since the wall 56 hits the side of the positioning member 52 just before being able to shut the shoji 7 and carrying out full close, applying the extension rail 12a to the wall 56 of the rail swallowing member 54, the door end 11a can be positioned in a proper position.

Brief Description of the Drawings

Drawing 1 The front view showing one embodiment which applied the opening device by this invention to the entrance sliding door.
Drawing 2 The cross-sectional view of the entrance sliding door by the embodiment.
Drawing 3 The figure showing the section of Kamoi of an entrance sliding door, and a threshold.
Drawing 4 The figure in which showing the A-A section in drawing 3, and showing the physical relationship in the state where the door end of the shoji was put into the rebate provided in the right-and-left door post.
Drawing 5 The perspective view showing the spacing member attached to the upper bed part of a left-vertical frame.
Drawing 6 The figure showing an operation of the rail extension member provided in the spacing member in one.
Drawing 7 The figure in which showing the B-B section in drawing 3, and showing the spacing member attached to the lower end part of a left-vertical frame, and the rail swallowing member with which the door end of the shoji was equipped.

Description of Notations

2 Kamoi
3 Threshold
4 Left-vertical frame
5 Right longitudinal frame
6 Shoji
7 Shoji
12 Window screen
20 Rebate
22 Rebate
23a and 23b Step
24a and 24b Step
25 Airtight material
26 Airtight material
30 Rail swallowing member
40 Spacing member
42 Rail extension member
42a Tapered surface

Drawing 2

For drawings please refer to the original document.

Drawing 1

For drawings please refer to the original document.

Drawing 3

For drawings please refer to the original document.

Drawing 4

For drawings please refer to the original document.

Drawing 5

For drawings please refer to the original document.

Drawing 6

For drawings please refer to the original document.

Drawing 7

For drawings please refer to the original document.

For drawings please refer to the original document.

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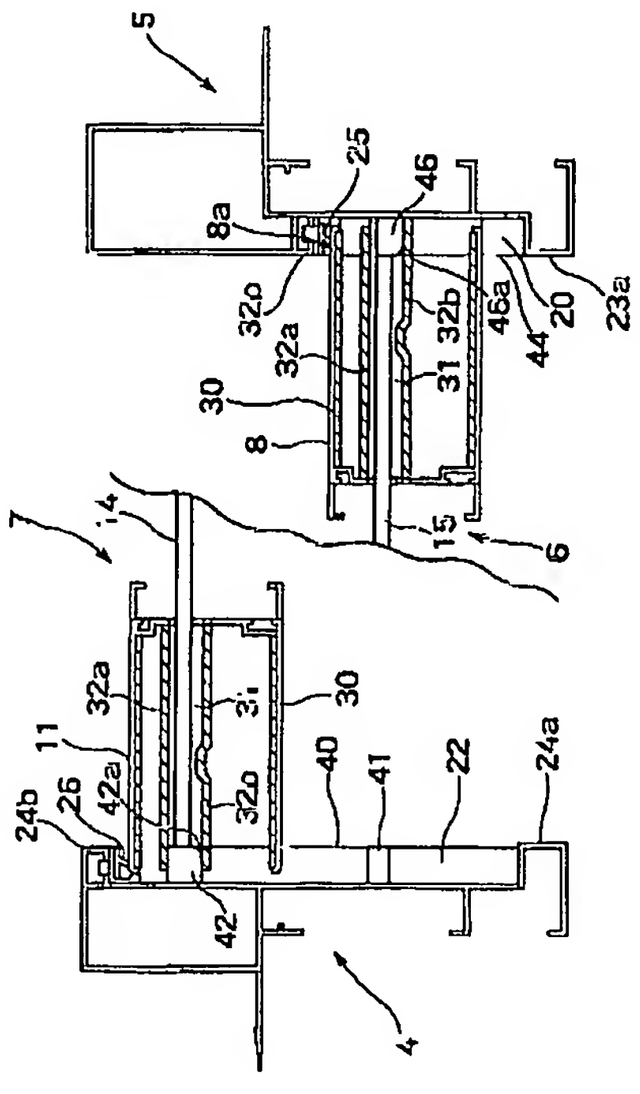
(54)【発明の名称】　開口部装置

(57)【要約】
【課題】　障子を全閉にするときに障子の戸先を気密材に対して適切な位置に位置決めする。
【解決手段】　左右の縦枠４、５にそれぞれ障子の戸先を受け入れる凹部からなる戸じゃくり２０、２２を形成するとともに、全閉時の障子の戸先に近接する戸じゃくりの段部２３ｂ、２４ｂに気密材２５、２６を設け、上下枠２，３との接合部分に形成される戸じゃくり２２の不要なスペースを埋めるためのスペーサ部材４０、４４を前記縦枠の少なくとも一方の端部に取り付けるとともに、前記障子の戸先側に障子案内レール１３の呑み込み部材３０を設け、スペーサ部材４０に、障子案内レール１３から延長されるレール延長部材４２、４６を一体的に形成し、このレール延長部材４２に呑み込み部材３０の内面と接しながら障子の戸先を気密部材２５、２６に対して適正な位置に位置決めする引き寄せ面４２ａ、４６ａを形成する。



【特許請求の範囲】
【請求項１】上下左右枠により形成された枠体と、前記枠体内で引き違いに開閉される左右２枚の障子と、を有する開口部装置であって、
前記左右の縦枠にそれぞれ障子の戸先を受け入れる凹部からなる戸じゃくりを形成するとともに、全閉時の障子の戸先と近接する戸じゃくりの段部または前記戸先に気密材を設け、
前記上下枠との接合部分に形成される戸じゃくりの不要なスペースを埋めるためのスペーサ部材を前記縦枠の少なくとも一方の端部に取り付けるとともに、前記障子の戸先側に障子案内レールの呑み込み部を設け、
前記スペーサ部材に、前記上枠または下枠の障子案内レールから延長されるレール延長部材を一体的に形成し、前記レール延長部材に前記呑み込み部の内面と接しながら障子の戸先を前記気密部材に対して適正な位置に位置決めする引き寄せ部を形成したことを特徴とする開口部装置。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、玄関等の家屋の開口部に取り付けられる引き戸を有する開口部装置に係り、特に、引き戸を閉めたときに、引き戸の戸先が戸じゃくり内の適正な位置に位置決めされるようになした開口部装置に関する。
【０００２】
【従来の技術】従来、この種の開口部装置は、一般家屋における玄関引き戸として広く利用されている。引き戸は、引き違いに開閉される２枚の障子（戸体）からなり、さらに網戸が取り付けられることが多い。
【０００３】このような引き戸においては、上枠または下枠に障子の開閉移動を案内するガイドレールが設けられおり、障子には一定のガタつきや振れが生じるようにすることで、スムーズに開け閉めすることができるようになっている。
【０００４】また、縦枠には、障子の戸先を受け入れる戸じゃくりと呼ばれる凹部が形成されており、障子を閉めると、その戸先が戸じゃくりに入って気密材と当たり、隙間が生じないようになっている。
【０００５】
【発明が解決しようとする課題】しかしながら、下枠にあっては障子の戸先までは、ガイドレールによって案内されないために、障子を完全に閉めきるときに、戸先が振れて戸じゃくりに入り込まなかったり、戸先と気密材が適正に当たらずに隙間ができるという欠点があった。
【０００６】そこで、本発明の目的は、前記従来技術の有する問題点を解消し、障子を全閉にするときに障子の戸先を気密材に対して適切な位置に位置決めすることが可能な開口部装置を提供することにある。
【０００７】
【課題を解決するための手段】前記の目的を達成するために、本発明は、上下左右枠により形成された枠体と、前記枠体内で引き違いに開閉される左右２枚の障子と、を有する開口部装置であって、前記左右の縦枠にそれぞれ障子の戸先を受け入れる凹部からなる戸じゃくりを形成するとともに、全閉時の障子の戸先と近接する戸じゃくりの段部または前記戸先に気密材を設け、前記上下枠との接合部分に形成される戸じゃくりの不要なスペースを埋めるためのスペーサ部材を前記縦枠の少なくとも一方の端部に取り付けるとともに、前記障子の戸先側に障子案内レールの呑み込み部を設け、前記スペーサ部材に、前記上枠または下枠の障子案内レールから延長されるレール延長部材を一体的に形成し、前記レール延長部材に前記呑み込み部の内面と接しながら障子の戸先を前記気密部材に対して適正な位置に位置決めする引き寄せ部を形成したことを特徴とするものである。
【０００８】
【発明の実施の形態】以下、本発明による開口部装置の一実施形態について、添付の図面を参照しながら説明する。図１は、本発明を家屋の玄関引き戸に適用した実施形態を示す正面図である。玄関の開口部には、上枠である鴨居２、下枠である敷居３、左右の縦枠４、５を四方組した枠体が取り付けられており、この枠体に２枚の障子６、７が引き違いに開閉されるように建て付けられている。この玄関引き戸には、網戸が取り付けられるようになっているが、図１では網戸は図示を省略されている。
【０００９】図２は、玄関引き戸全体の横断面を示す図で、図３は鴨居２、敷居３の断面を示す図である。参照符号８、９は、障子６を構成する縦框で、参照符号１０、１１は障子７を構成する縦框である。敷居３の上面には、障子６、障子７の開閉を案内する部材としてそれぞれガイドレール１２、１３が垂直に突き出るように形成されており、障子６、７は、ガイドレール１２、１３に沿って摺動しながら移動する。また、ガイドレール１２、１３には、それぞれ補助レール１２ａ、１３ａが平行に延びるようになっている。一方、鴨居２には、図３に示されるように、ガイドレール１８、１９が垂直に垂下している。なお網戸１２は、障子６、７と平行に最も室外側に配置されており、レール１７に沿って滑動させて開け閉めすることができる。
【００１０】次に、図４は、図３のＡ－Ａ断面を示し、右縦枠５に形成されている戸じゃくり２０と、左縦枠４の戸じゃくり２２を示している。まず、障子６では、縦框８の外縁部が戸先８ａになっており、戸じゃくり２０は、障子６を閉めたときに、戸先８ａを受け入れる凹部を構成している。この場合、戸じゃくり２２の幅は、障子６の一枚分に相当する幅寸法に設定されている。また、戸じゃくり２０のような凹部を右縦枠５に形成した結果、右縦枠５においては、室外側に段部２３ａが形成

されている。この段部２３ａと戸じゃくり２０を間に対峙する室内側の他方の段部２３ｂには、全閉時の障子６の戸先８ａが近接するようになっており、この段部２３ｂには戸先８ａとの間の隙間をシールする気密材２５が取り付けられている。

【００１１】他方、図４において、左縦枠４においても、同様に戸じゃくり２２が形成されている。この左縦枠４に設けた戸じゃくり２２は、右縦枠５の戸じゃくり２０とは幅が異なっており、障子６、７の２枚分の幅を有する凹部として構成されており、障子７の縦框１１の外縁部である戸先１１ａは、戸じゃくり２２において室内側に寄った位置に入り込むようになっている。このように、左縦枠４の方に障子６、７の２枚分の幅を有する凹部を戸じゃくり２２として設けることによって、室外側の方に前記右縦枠５の段部２３ａと対向する段部２４ａが形成されている。この段部２４ａと戸じゃくり２２を間に対峙する室内側の他方の段部２４ｂには、全閉時の障子７の戸先１１ａが近接するようになっており、この段部２４ｂには、障子７の戸先１１ａとの間の隙間をシールする気密材２６が取り付けられている。

【００１２】なお、図２に示されるように、網戸１４の左右の戸先１５ａ、１６ａには、ゴム等の可撓性の材料からなる遮蔽部材３０が取り付けられている。この遮蔽部材３０は、戸先の１５ａ、１６ａの室内側のコーナ縁の全長に亘って延びており、ヒレ部３１が戸じゃくり２０、２２に向かって張り出すようになっている。

【００１３】図３、図４において、障子６の縦框８、障子７の縦框１１の上端部には、それぞれガイドレール１８、１９を呑み込むレール呑込み部材３０が装着されている。このレール呑み込み部材３０は、長方体形状の樹脂製の部材で縦框７、８の上端部に嵌装して取り付けるキャップ形式の部材である。図４に示すように、ガイドレール１８、１９を呑み込むレール溝３１が壁部３２ａ、３２ｂによって形成され、この場合、壁部３２ａ、３２ｂの間隔は、ガイドレール１８、１９の幅に加えて所定の遊びをとった寸法になっている。

【００１４】次に、図５は、左縦枠４の上端部に取り付けられるスペーサ部材４０を示す。図５に示されるように、左縦枠４に鴨居２を接合すると、左縦枠４の上端部では戸じゃくり２２の一部分が鴨居２との間に不要なスペースとなって残されることになる。スペーサ部材４０は、この不要なスペースを埋めるために取り付けられる部材で、戸じゃくり２２の幅と略等しい幅と、不要なスペース分の高さを有している。

【００１５】図４および図５において、このようなスペーサ部材４０には、鴨居２のガイドレール１８、１９に連続するレール延長部材４１、４２が設けられており、スペーサ部材４０の本体部から垂下するように一体成形されている。

【００１６】図４に示すように、レール延長部材４２は、障子７の縦框１１に装着されたレール呑込み部材３０との関係では、障子７を全閉にして戸じゃくり２２に入れると、レール溝３１に嵌入するようになっている。そして、このレール延長部材４２には、テーパー面４２ａが形成されており、このテーパ面４２ａは、壁部３２ｂの内面に接しながら、障子７の戸先１１ａを気密部材２６に対して適正な位置に位置決めする引き寄せ面として機能するようになっている。

【００１７】右縦枠５の上端部にも、同様のスペーサ部材４４が取り付けられている。右縦枠５の場合、戸じゃくり２０の幅は、障子６の一枚分であるため、スペーサ部材４４の幅は、その狭い戸じゃくり２０の幅に対応し、ガイドレール１５に連続するレール延長部材４６が１つ一体に形成されている。このレール延長部材４６は、前述したレール延長部材４２と同様にてテーパー面４６ａが形成され、このテーパー面４６ａは、レール呑込み部材３０の壁部３２ｂの内面に接しながら、障子６の戸先８ａを気密部材２５に対して適正な位置に位置決めする引き寄せ面として機能するようになっている点は同様である。

【００１８】次に、図６は、障子７を全閉にする直前の戸先１１ａと、レール延長部材４２の位置関係を示す図である。鴨居２のガイドレール１８の場合、障子７に取り付けてある図示しない戸車が転動するので、障子７を閉めるために移動する際には、多少のがたつきやぶれが生じる。このため、障子７の戸先１１ａが戸じゃくり２２に入り込む直前の位置が図６のように室内側に寄っていたとする。障子７をさらに閉めて、戸じゃくり２２に入れると、レール呑込み部材３０の壁部３２ｂの内側にレール延長部材４２のテーパ面４２ａが当たり、完全に障子７を閉める過程で、テーパ面４２ａによって戸先１１ａは、室外側に少しずつ引き寄せられる。最終的には、戸先１１ａと気密部材２６が適正に接する位置に位置決めされる。

【００１９】このように、スペーサ４０にレール延長部材４２を一体に設け、さらにレール延長部材４２にテーパ面４２ａを設けることで、障子７にぶれが生じても戸じゃくり２２内の適正な位置に引き寄せて位置決めすることができる。とりわけ、本実施形態のように、戸じゃくり２２が障子２枚分と幅広になっている場合、障子７を閉めると、レール延長部材４２は戸先に嵌入して外から見えないように隠せるので、意匠上の美観が向上する。また、幅広の戸じゃくり２２に障子７の戸先１１ａの外側に当たって戸先１１ａを引き寄せする部材を設ける必要がなく、部品点数を削減し鴨居２との接合部分の不要なスペースを埋めるために従来からあるスペーサ４０に引き寄せ構造を兼用させることができる。

【００２０】なお、図４において、右縦枠５の戸じゃくり２０に障子６の戸先８ａを入れるときも、同様に、スペーサ４４に一体形成したレール延長部材４６のテーパ

面４６ａにレール呑込み部材３０の壁部３２ｂが当たって、障子６の戸先８ａは気密材２５に対して適正な位置に引き寄せられる。

【００２１】図7は、図3のＢ－Ｂ断面を示し、左縦枠４の下端部に取り付けられるスペーサ部材５０を示す。左縦枠と鴨居２の接合部分にできる戸じゃくり２２の不要なスペースを埋めるスペーサ部材５０には、位置決め部５２が一体的に設けられている。

【００２２】図3および図7に示されるように、同じようなレール呑込み部材５４は、障子７の縦框の下端部にも装着されている。このレール呑込み部材５４では、ガイドレール１２と摺接する断面U字形の凹部５５が形成されている。また、補助レール１２ａは、レール呑込み部材５４に形成された内壁５６に当たるようになっている。なお、レール呑込み部材３４は、他方の障子６の縦框８の下端部にも装着されているが、図示は省略する。

【００２３】敷居３のガイドレール１２の場合、障子７は滑りながら移動し鴨居２側に比べてがたつきやぶれが少ない。このため、レール呑込み部材５４の内壁５６に補助レール１２ａを当てながら障子７を閉めることができ、全閉する直前には、位置決め部材５２の側面に内壁５６が当たるので、戸先１１ａを適正な位置に位置決めすることができる。

【００２４】

【発明の効果】以上の説明から明らかなように、本発明によれば、障子の戸先側に障子案内レールの呑み込み部材を設け、前記スペーサ部材に、前記上枠または下枠の障子案内レールに連続するレール延長部材を一体的に形成し、前記レール延長部材に前記呑み込み部の内面と接しながら障子の戸先を前記気密部材に対して適正な位置に位置決めする引き寄せ面を形成したので、障子を全閉にするときに障子の戸先を気密材に対して適切な位置に位置決めすることが可能となり、また、レール延長部材を戸先に嵌入して外から見えないように隠せるので、意匠上の美観を向上させることができる。

【図面の簡単な説明】

【図１】本発明による開口部装置を玄関引き戸に適用した一実施形態を示す正面図。

【図２】同実施形態による玄関引き戸の横断面図。

【図３】玄関引き戸の鴨居と敷居の断面を示す図。

【図４】図３におけるＡ－Ａ断面を示し、左右縦枠に設けた戸じゃくりに障子の戸先を入れた状態の位置関係を示す図。

【図５】左縦枠の上端部に取り付けられるスペーサ部材を示す斜視図。

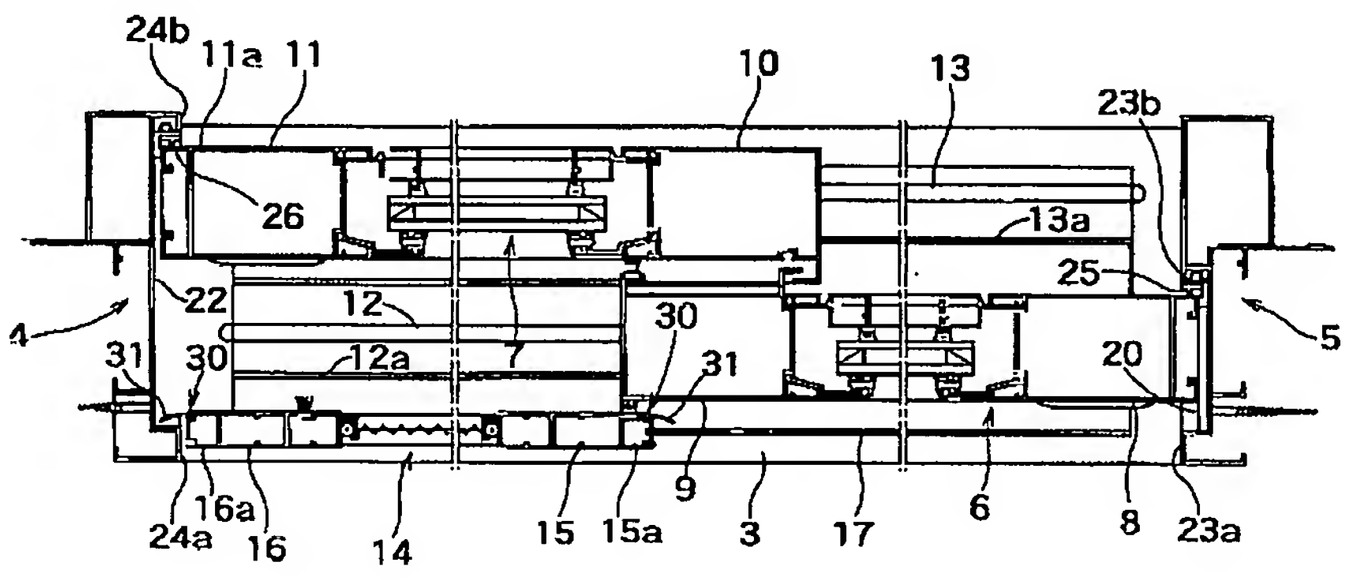
【図６】スペーサ部材に一体的に設けたレール延長部材の作用を示す図。

【図７】図３におけるＢ－Ｂ断面を示し、左縦枠の下端部に取り付けられるスペーサ部材と障子の戸先に装着したレール呑込み部材を示す図。

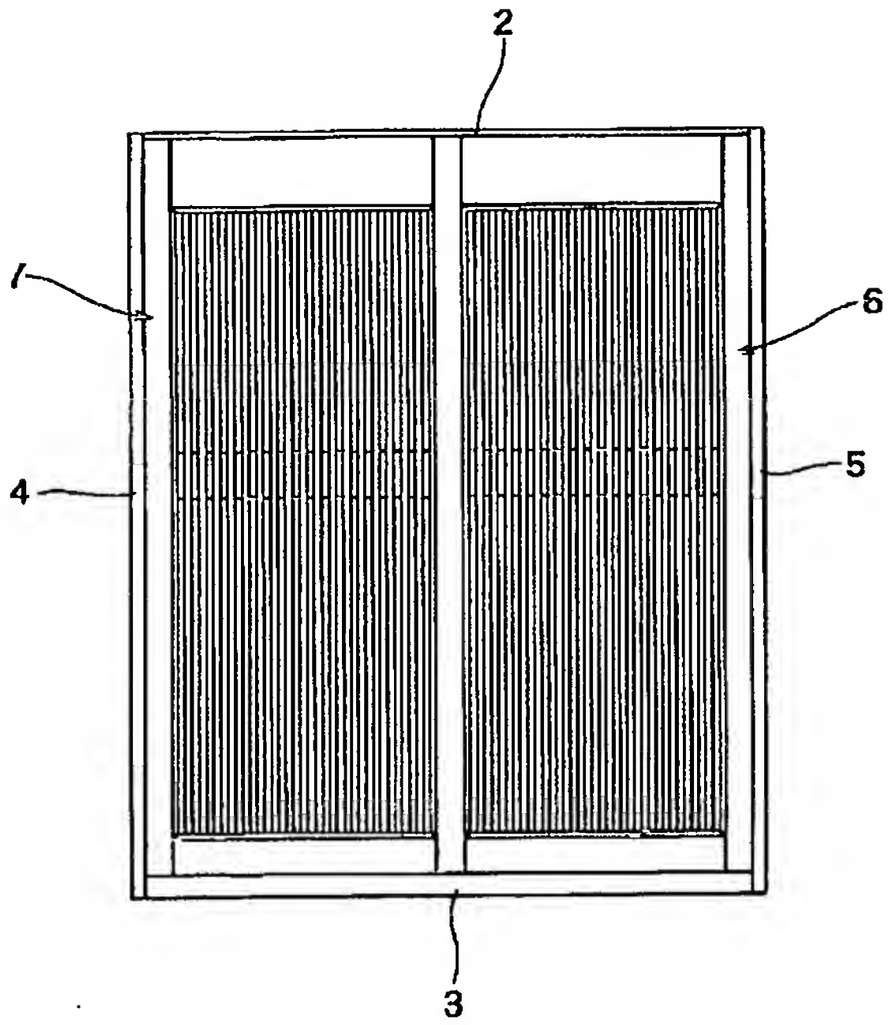
【符号の説明】

２　鴨居
３　敷居
４　左縦枠
５　右縦枠
６　障子
７　障子
１２　網戸
２０　戸じゃくり
２２　戸じゃくり
２３ａ、２３ｂ　段部
２４ａ、２４ｂ　段部
２５　気密材
２６　気密材
３０　レール呑込み部材
４０　スペーサ部材
４２　レール延長部材
４２ａ　テーパ面

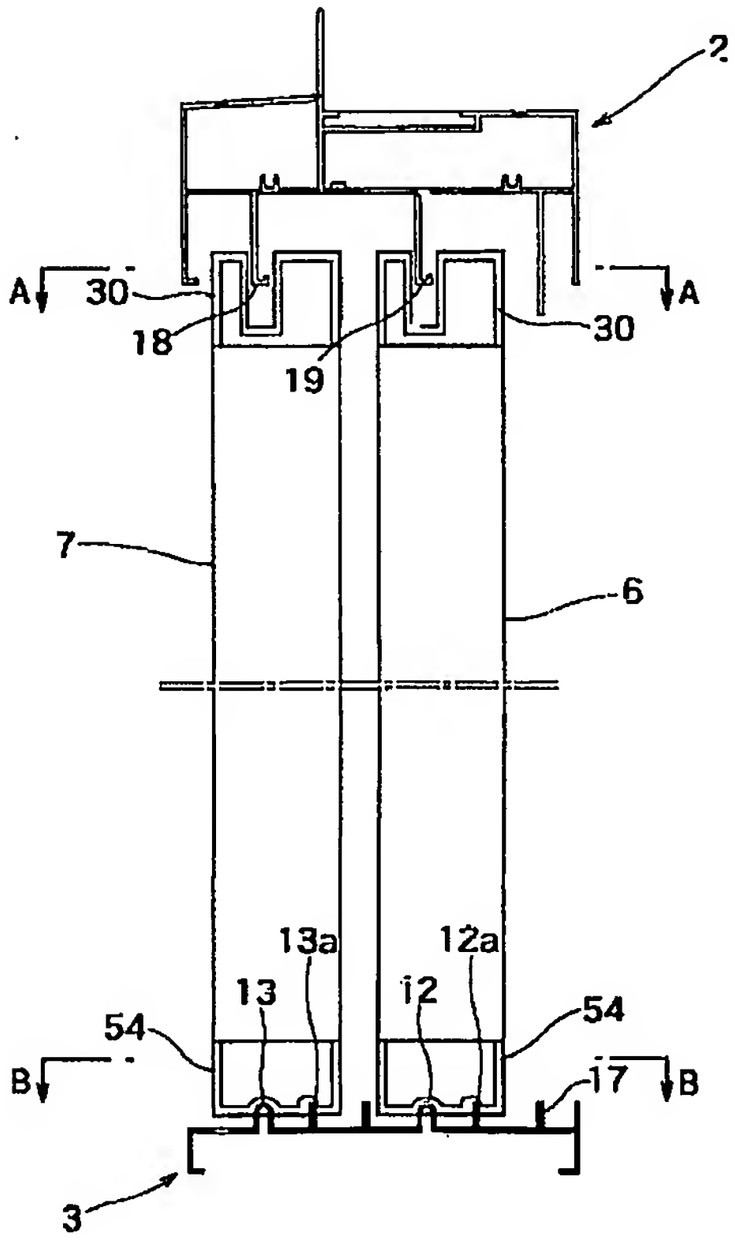
【図2】



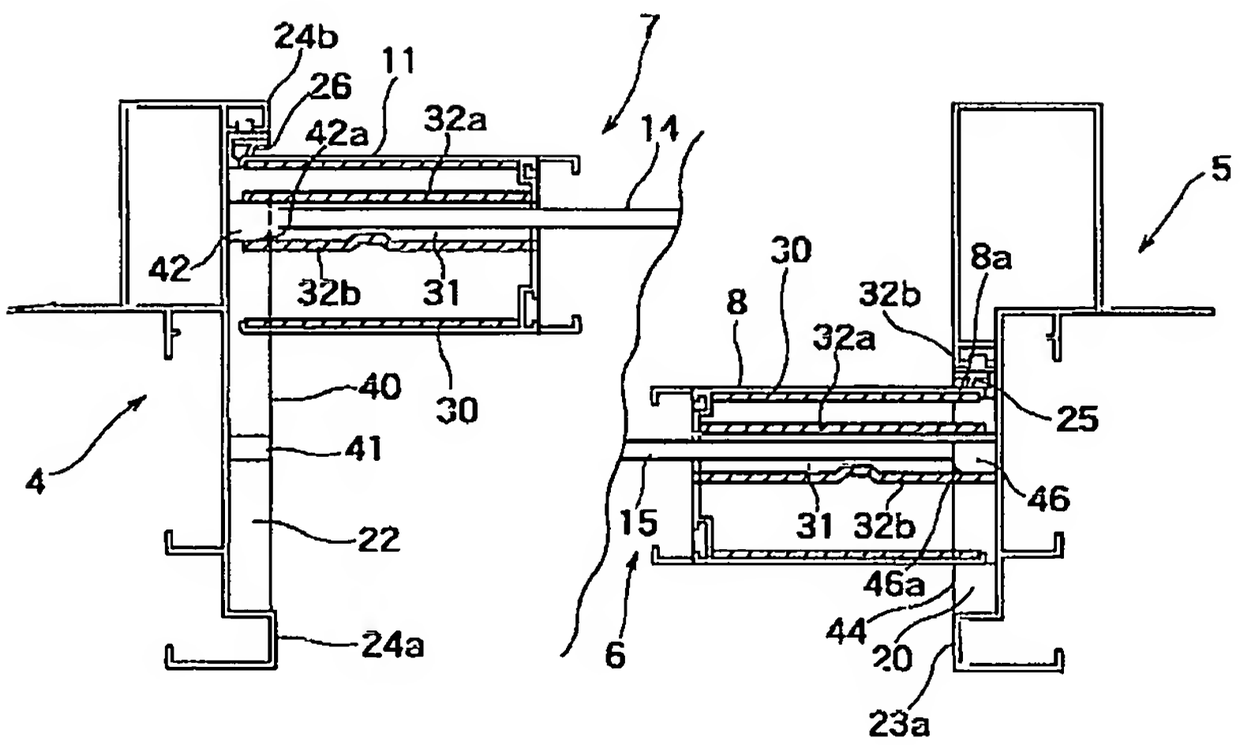
【図1】


2
1
6
4
5
3

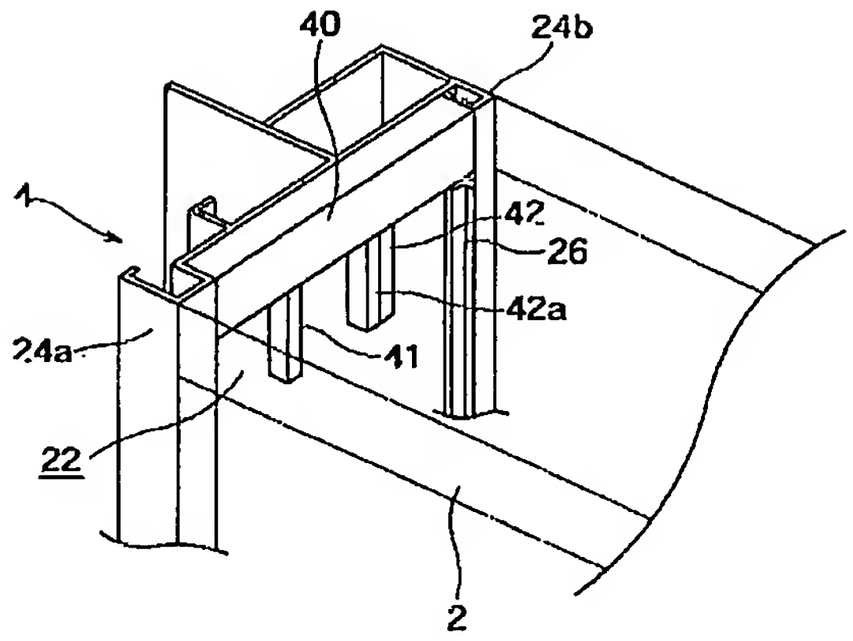
【図3】


2
A
30
18
19
30
A
7
6
13a
12a
13
12
54
54
B
17
B
3

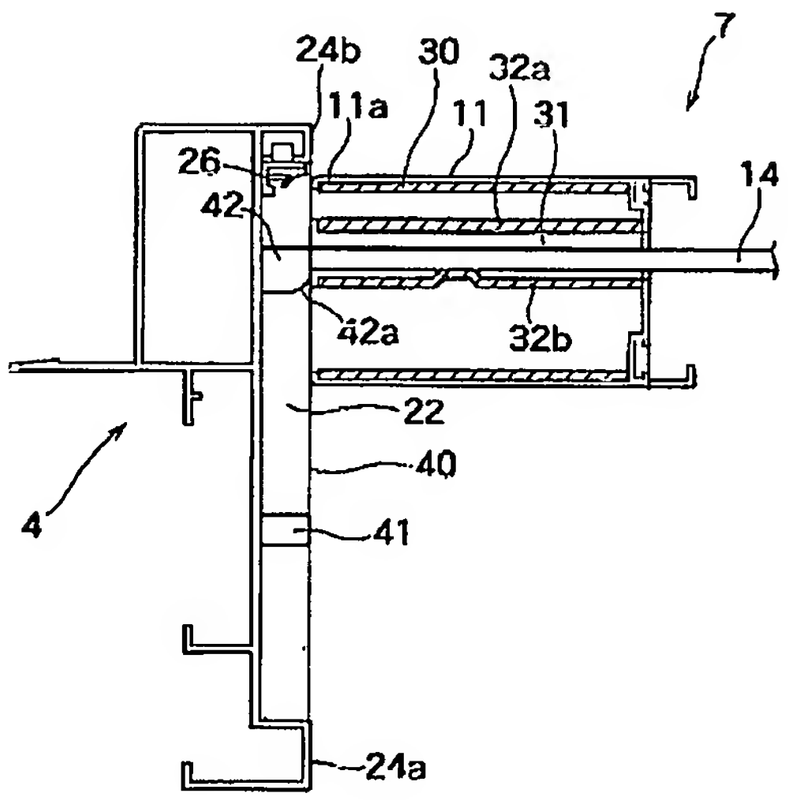
【図4】


24b
26
11
42a
32a
14
42
32b
31
30
40
41
4
22
24a
6
30
8
8a
32b
32a
25
46
15
31
32b
46a
44
20
23a
5

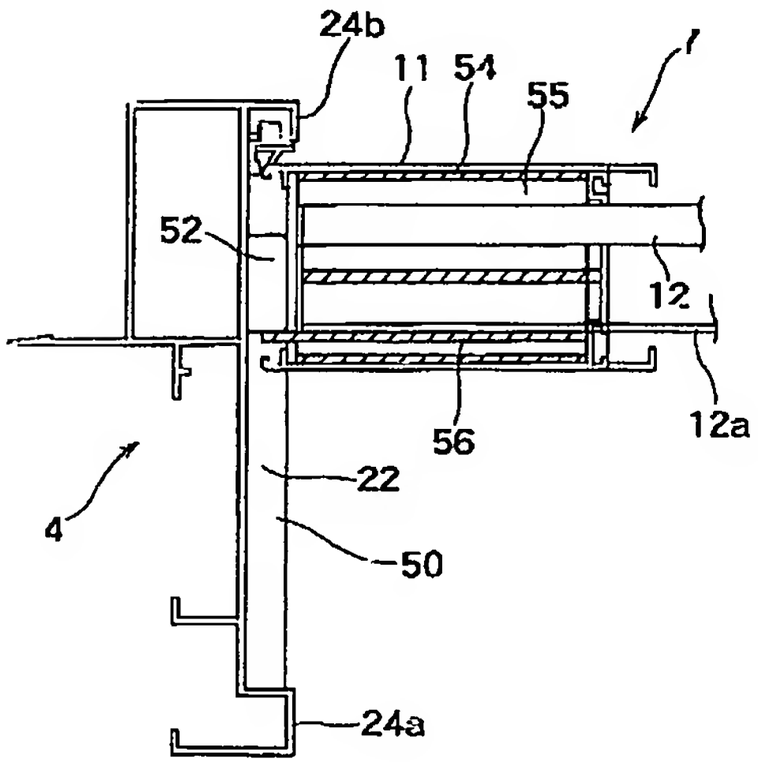
【図5】


40
24b
1
42
26
42a
24a
41
22
2

【図6】


7
24b
30
32a
11a
11
31
26
14
42
42a
32b
22
40
4
41
24a

【図7】


24b
11
54
55
1
52
12
56
12a
22
4
50
24a